Material Safety Data Sheet

Dioctyl Phthalate

CREATION DATE: 06/10/1996 REVISION DATE: 02/24/2015

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

a) Product Name: DOP (Dioctyl Phthalate)

b) Recommended use of the chemical and restrictions on use:
- **Recommended use : Leather, Sheet, Gloves, Hoses, Footwears, Wallpapers, Erasers**
- **restrictions on use : no data available**

c) Manufacturer/Supplier/Distributor Information
- **Name: LG Chem, Ltd.**
- **Address**

  Ulsan Plant : 388, MANGYANG-RI, ONYANG-EUP, ULJU-GUN, ULSAN-CITY 689-901, KOREA

  Naju Plant : 1, SONGWAL-DONG, NAJU-SI, JEOLLANAM-DO, 520-130, KOREA
- **Emergency phone number : 82-52-231-4061, 82-61-330-1261**

SECTION 2 HAZARDS IDENTIFICATION

a) Hazard/Risk Classification
- **Serious eye damage/irritation : classification 2B**
- **Reproductive toxicity : classification 1B**
- **Specific target organ toxicity(repeated exposure) : classification 2B**

b) Label elements including precautionary statements
- **Symbol**

- **Signal Word : Danger**
- **Hazard/Risk Statement**

  H360 can cause damage to baby and reproductive ability

  H373 can cause damage to liver and kidney when you are exposed for a long time
- **Precautionary Statement**

  Precaution

  P201 have a instruction manual before use

  P202 don`t use before read the safe,precautionary statement and understand it

P260 don`t inhale the dust, fume, gas, mist, vapor and spray
P281 wear the proper protector

Correspondence

P308+P313 if you worry about contact and exposure, receive the medical advice
P314 if you feel uncomfortable, receive the medical advice

Storage

P405 store locked up

Detroy

P501 (following relative rules)destroy contents and receiver

c) Other Hazard/Risk which are not included in the classification criteria (e.g. dust explosion hazard):

- NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=1 REACTIVITY=0

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name Other name CAS number or Other identification number Content (%)

Chemical Name	Trade name/Synonym	CAS number	Content(%)
DI-(2-ethylhexyl) phthalate	Bis(2-ethylhexyl) phthalate	117-81-7	100

SECTION 4 FIRST AID MEASURES

a) Eye contact:

Wash eyes immediately with large amounts of water
If easy to do, remove contact lenses.
Get medical attention if symptoms persist.

b) Skin contact:

Remove contaminated clothing and shoes immediately.
Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes).
Get medical attention if symptoms persist.

c) Inhalation:

If symptomatic, move to fresh air immediately.
If the patient don`t breath, do CRP
Keep warm and comfortable
According to symptoms, treat the patient supportively
Get medical attention if symptoms persist.

d) Ingestion:

If the patient have a consciousness and don`t seizure, keep the head under hips.
Using the lepcac syrup and water, cause the vomit

If there is not effective within 20minutes, repeat it immediately
The patient who do not vomit wash the stomach carefully
According to symptoms, treat the patient supportively
the man who have a certification wash the stomach
Get medical attention if symptoms persist.

e) Indication of immediate medical attention and notes for physician : no data available
there is no specipic antidote
According to symptoms, treat the patient supportively

SECTION 5 FIRE FIGHTING MEASURES

a) Suitable (and unsuitable) extinguishing media:
- Suitable extinguishing media : Dry chemical, carbon dioxide, water spray or regular foam
- Unsuitable extinguishing media : no data available
- Large fires : water, smog or regular foam

b) Specific hazards arising from the chemical
- Thermal decomposition products : can include toxcity and noxious gas
- Risk of fires and explosion : heat and spark can cause light fires

c) Special protective equipment and precautions for fire-fighters:
Full firefighting turn-out gear (bunker gear).
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 6 ACCIDENTAL RELEASE MEASURES

a) Personal precautions, protective equipment and emergency procedures:
Do not touch the damaged container and organic material without suitable protection
Stand against the wind and avoid low land
Open the windows in a sealed room

b) Environmental precautions and protective procedures
- Atmosphere : no data available
- Soil : no data available
- Underwater : store it far way from water supply and sewage

c) Methods and materials for containment and cleaning up:
- For Small spills:
Absorb with sand or other non-combustible material.
Collect spilled material in appropriate container for disposal.
Keep unnecessary people away, isolate hazard area and deny entry.
100 pounds of report quantity(RQ) : The Superfund Amendments and Reauthorization Act

(SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance is reported to the local emergency planning committee

- For Large spills : no data available

SECTION 7 HANDLING AND STORAGE

a) Precautions for safe handling:
No special precautionary health measure should be needed under anticipated conditions of use.

b) Conditions for safe storage (including any incompatibilities):
Observe all federal, state and local regulations when storing this substance.
Store away from incompatible substances.

SECTION 8 EXPOSURE CONTROLS & PERSONAL PROTECTION

a) Control parameters (e.g. occupational exposure limit values, biological limit values):
- Domestic regulation : TWA - 5 mg/㎥, STEL - 10 mg/㎥
- OSHA PEL : TWA - 5mg/㎥, STEL - 10mg/㎥
- ACGIH TLV : TWA - 5 mg/㎥
- NOISH REL : TWA - 5 mg/㎥(10hr), Ceiling(15min), STEL - 10 mg/㎥
- DFG MAK : TWA - 10 mg/㎥, 100 mg/㎥ 30minute peak, average value, 1 time/shift

b) Appropriate engineering controls:
Provide local exhaust ventilation to meet published exposure limits.
Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.

c) Personal protective equipment
- Respiratory protection:
The following respirators and maximum use concentrations are recommendations by the U.S> Department of Health and Human Services, NIOSH Pocket Guide to Chemical Hazards; NIOSH criteria documents or by the U.S. Department of Labor, 29 CFR 1910 Subpart Z.
The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Sagety and Health Administration(NIOSH-MSHA)

At any detectable concentration:
Any self-contained breathing apparatus that has a full facepiece and
1OHS06440 Page 005 of 008
is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing

apparatus operated in pressure-demand or other positive-pressure mode.

Escape :
Any air-purifying, full facepiece respirator with a high-efficiency particulate filter.
Any appropriate escape-type, self-contained breathing apparatus.

For firefighting and other immediately dangerous to life or health conditions :
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

- Eye protection: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

- Hands protection: Wear appropriate chemical resistant gloves.

- Body protection: Wear appropriate chemical resistant clothing.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

a) Appearance (physical state, color etc): colorless to pale yellow, oily liquid
b) Odor: almost odorless
c) Odor threshold: no data available
d) pH: no data available
e) Meting point/freezing point: -67 F (-55 ℃)
f) Initial boiling point and boiling range: 726 F (386 ℃)
g) Flashing point : 403 F (206 ℃)
h) Evaporation rate: no data available
i) Flammability Class(OSHA): IIIB
j) Upper/lower flammability or explosive limits: 0.3%(473℉)(245℃) ~ no data available
k) Vapor pressure: 1.32 mmHg @ 200℃
l) Solubility: 0.005%(20℃)
m) Vapor density: 16
n) Relative density: 0.986
o) Partition coefficient: n-octanol/water: 5.03
p) Auto-ignition temperature: 662℉(350℃)
q) Decomposition temperature: no data available
r) Viscosity: 80 cP(20℃)
s) Formula mass: 390.56

SECTION 10 STABILITY AND REACTIVITY

a) Chemical stability and possibility of hazardous reactions:

Stable under normal temperatures and pressures.
Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

b) Conditions to avoid (e.g. static discharge, shock or vibration, etc):
May burn but does not ignite readily. Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

c) Incompatible materials: oxidizing materials
Strong acids : incompatible
Strong alkalies : Incompatible
Nitrates : Fire and explosion hazard
Strong oxidizers : Fire and explosion hazard.

d) Hazardous decomposition products:
Thermal decomposition may release toxic and/or hazardous gases.

SECTION 11 TOXICOLOGICAL INFORMATION

a) Information on the likely routes of exposure
- Inhalation : 5000 mg/㎥ Immediately Dangerous to Lofe or Health.
Acute Exposure :
No ill effects have been reported at room temperature. Mist or vapors from heated meterial may cause irritation with coughing, sore throat, nausea, staggering and bronchitis. Exposure to saturated vapors produced no deaths in rats after 2 hours; all animals died within the next 2 hours.
Chronic exposure :
After exposure of 6~7 years, pain, numbness, spasms, weakness in the upper and lower extremities, polyneuritis and neurosomatic dysfunction was reported in workers. Intermittent exposure of mice for 12 weeks produced signs of diffuse chronic lung inflammation, similar to a burn reaction.

- Ingestion
Cause a nausea, diarrhea and abdominal pain.

- Skin contect
Acute exposure : contact may cause irritation and eczema.
Chronic exposure : no data available.

- Eye contact
Acute exposure : direct contact may cause rednedss and irritation.
Chronic exposure : no data available

b) Health hazards information
- Acute toxic: no data available
- Skin corrosive/irritant: no data available

- Serious eye damage/eye irritation: no data available
- Respiratory sensitization: no data available
- Skin sensitization: no data available
- Carcinogenicity: no data available(IARC Group3)
◀ IARC & EU information is a high priority in carcinogenicity. So According to IARC, it is exception in GHS
- Germ Cell Mutagenicity : no data available
- Reproductive toxicity : reported the reproductive effects to next generation in quantity arrangement without influence to their mother
- Specific target organ toxicity (single exposure): no data available
- Specific target organ toxicity (repeated exposure): reported the testis disorder, hepatocyte line fat settle aurrounding hepatic portal vein, full of fat in lysosome, exhaustion of glycogen change of a bile duct structure to experiment animals
- Aspiration hazard: no data available

SECTION 12 ECOLOGICAL INFORMATION

a) Aquatic and terrestrial ecotoxicity:
- Fishs : LC20 0.3 mg/ℓ 96hr
- Crustaceans : EC50 0.133 mg/ℓ 48hr
- Birds : no data available

b) Persistence and degradability:
- Persistence: no data available
- Degradability: no data available

c) Bioaccumulative potential :
- biodegradability : 2.5(%) 28day (anaerobic, Seem-Sediment)
- condenasability : no data available

d) Mobility in soil : no data available

e) Other adverse effects: no data available

SECTION 13 DISPOSAL CONSIDERATIONS

a) Disposal method: Incinerate :
Discharge, treatment, or disposal may be subject to national, state or local laws.

b) Disposal precaution (including the disposal method of contaminated container and packaging):
Discharge, treatment, or disposal may be subject to national, state or local laws.

SECTION 14 TRANSPORT INFORMATION

a) UN number: no classification
b) UN proper shipping name: N/A
c) Transport hazard class: N/A
d) Packing group (if applicable): N/A
e) Marin pollution (yes/no): N/A
f) Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises: N/A

SECTION 15 REGULATORY INFORMATION

a) Industrial Safety and Health Act: no data available
b) Toxic Chemical Control Act : no data available.
c) Dangerous Material Safety Control Act: no data available.
d) Wastes Management Act: no data available
e) Other requirements in domestic and other countries: no data available

SECTION 16 OTHER INFORMATION

a) Information source and references :
International Uniform Chemical Information Database (IUCLID) : http://ecb.jrc.it/esis
Korea Occupational Health & Safety Agency : http://www.kosha.net
European Union Risk Assessment Report/ BIS(2-ETHYLHEXYL) PHTHALATE(DEHP) ,2008
U.S. National library of Medicine (NLM) Hazardous Substances Data Bank(HSDB)
ACGIH, TLV and EBI, Publication # 0108, 2008
ARC. Monographs on Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva

b) Issuing date : 06/10/1996
c) Revision number and date : 7th Revision 02/24/2015
d) others : -